

## Lack of Insight of Inner Eye Is the Reflection of Cognitive Behaviour

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**Abstract**

Anosognosia, also called "lack of insight," is a symptom of severe mental illness experienced by some that impairs a person's ability to understand and perceive his or her illness. It is the single largest reason why people with schizophrenia or bipolar disorder refuse medications or do not seek treatment. Without awareness of the illness, refusing treatment appears rational, no matter how clear the need for treatment might be to others. Approximately 50% of individuals with schizophrenia and 40% with bipolar disorder have symptoms of anosognosia. Long recognized in stroke, Alzheimer's disease and other neurological conditions, studies of anosognosia in psychiatric disorders is producing a growing body of evidence of anatomical damage in the part of the brain involved with self-reflection. When taking medications, insight improves in some patients.

**Key words:** Denial of deficit, Lack of insight, Cognition, Agnosias, Dementia, Hemisphere, MRI, CT Scan, Hemiplegia, early onset dementia (EOD), late onset dementia (LOD), neuropsychiatric symptoms, apathy, Alzheimer's disease, frontotemporal dementia.

**Overview:** Anosognosia is a condition where you can't recognize other health conditions or problems that you have. Experts commonly describe it as "denial of deficit" or "lack of insight." It falls under the family of agnosias, all of which happen when your brain can't recognize or process what your senses tell it.

Anosognosia is a neurological condition in which the patient is unaware of their neurological deficit or psychiatric condition. It is associated with mental illness, dementia, and structural brain lesion, as is seen in right hemisphere stroke patients [1].

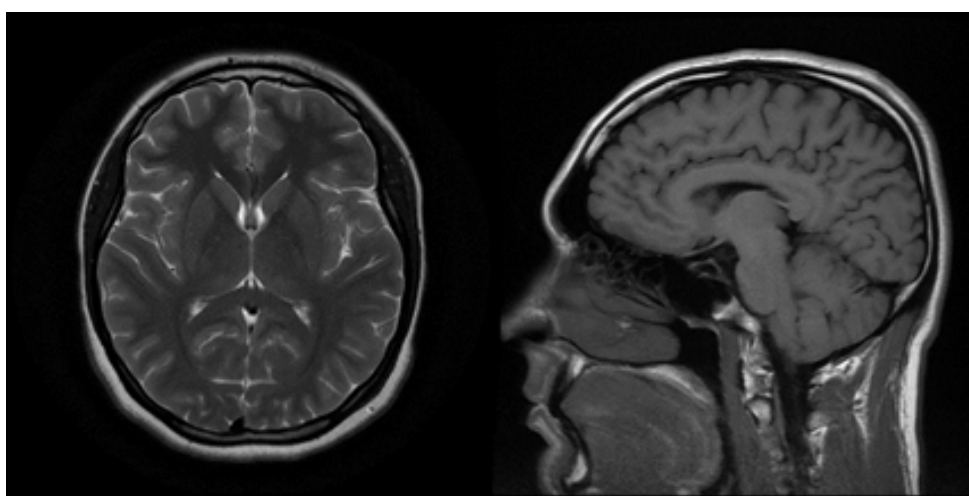
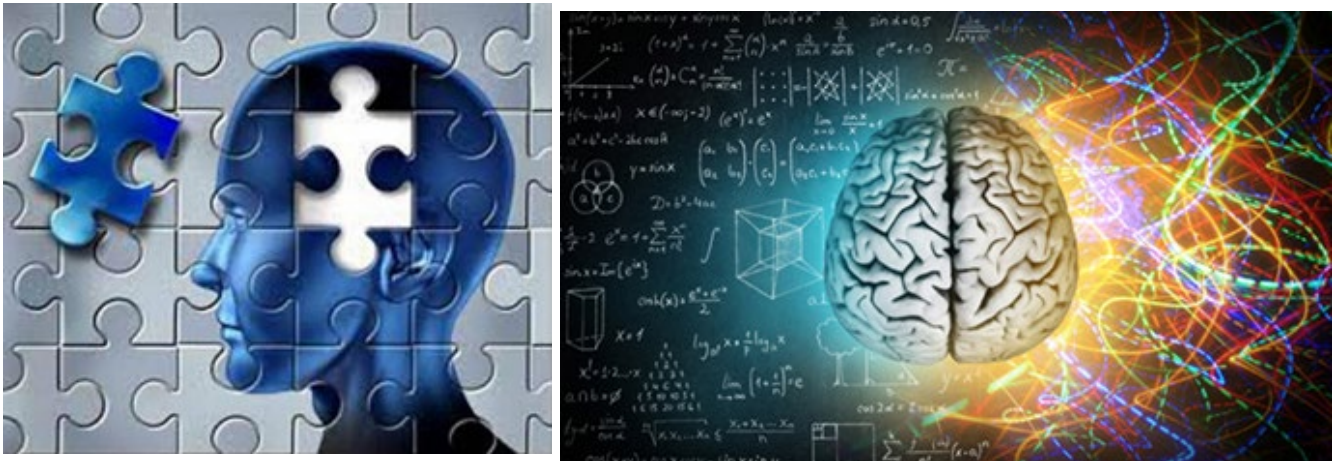


Figure 1: Normal brain MRI





**Figure 4:** Mental disorder in anosognosia

**How common is this condition?** Anosognosia is incredibly common with certain mental health conditions. Experts estimate that it affects between 50% and 98% of people with schizophrenia, about 40% of people with bipolar disorder, and more than 80% of people with Alzheimer’s disease. It also happens to between 10% and 18% of people who have one-sided paralysis after a stroke [3].

**How does anosognosia affect my body?** Your brain keeps track of what’s going on with your body using a “self-image.” If you have an injury, your body updates your self-image to reflect that, and it will keep updating as your body heals. People with anosognosia have damage in the areas of their brain that update their self-image. Because that person’s mind can’t update their self-image, they can’t process or recognize that they have a health problem. That’s what makes this condition different from the kind of denial described by the Kübler-Ross model (commonly known as the five stages of grief). A person in denial rejects or avoids accepting reality because it’s unpleasant or distressing. A person with anosognosia can’t recognize the problem at all. Because they can’t recognize they have a medical problem, people with this condition often don’t see the need to care for that problem. In more severe cases, they actively avoid or resist treatment [4].

**What are the symptoms of anosognosia?** People with anosognosia usually show that they can’t recognize a medical problem they have, either through action or what they say. In some cases, people with this condition will rationalize what’s happening to them, or they may try to cover up symptoms. They may recognize some symptoms but not others. Anosognosia means a person can’t do one or more of the following:

- Recognize that they have an illness or medical problem.
- Recognize the signs and symptoms of the condition that they experience.
- Connect their signs and symptoms to that condition.
- Understand and agree that the condition is serious and needs treatment.

In some cases, a person with this condition may avoid the truth about their condition, and they might do so consciously or without even realizing it. Some might confabulate, which is when a person’s mind fills in gaps in their memory with false memories. Anosognosia can also happen in certain ways with specific symptoms, with some examples below [5].

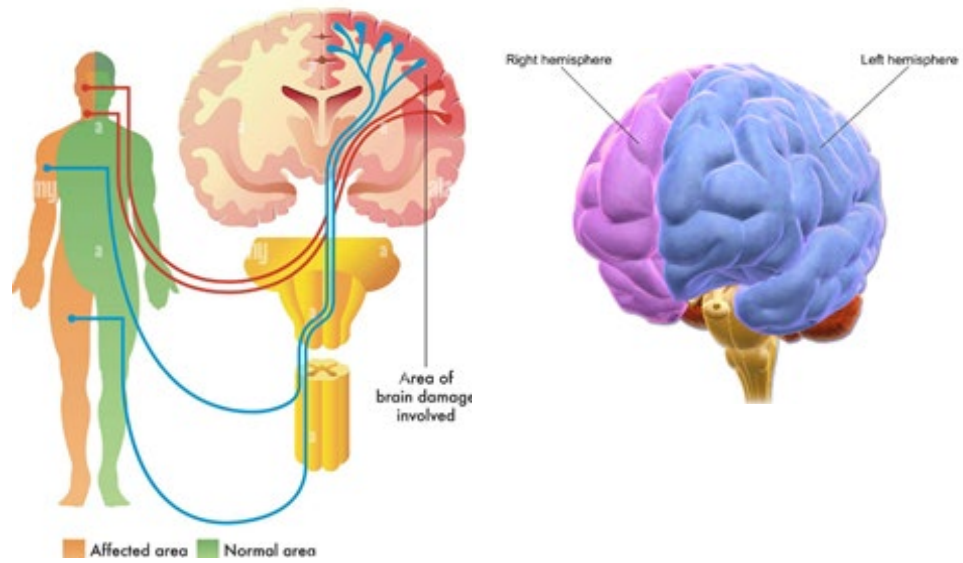
**One-sided sensory and movement problems:** Anosognosia got its name from French neurologist Joseph Babinski in 1914, who created the term to describe someone who’d lost the ability to use or feel the left side of their body. That person was unaware of the problem, even though they couldn’t use the left side of their body. Anosognosia that has this one-sided effect more commonly affects the left side of your body, but it can affect the right side. The two key symptoms that happen with this are:

**Hemiplegia:** Pronounced *hem-ee-plee-gee-uh*, this is paralysis on one side of the body. A person with anosognosia who can’t move one side of their body will still believe they can.[6]





**HEMIPLEGIA**  
 (complete paralysis of the muscles of one half of the body)



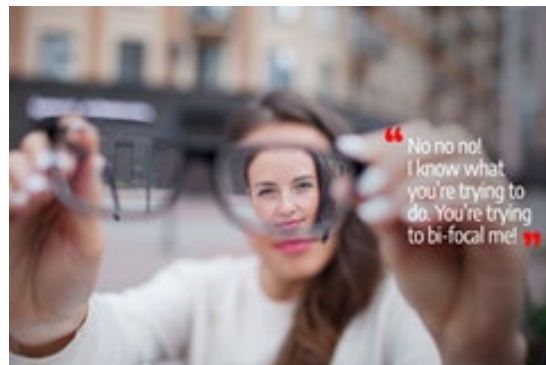
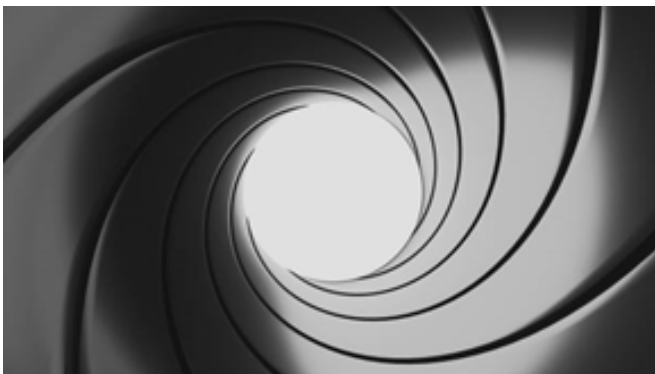
**Figure 5:** Hemiplegia

**Hemi sensory loss:** This is a loss of your senses, including vision, hearing and touch, on one side of your body.

**Anton’s syndrome (visual anosognosia):** Anton’s syndrome is an extremely rare type of anosognosia that affects eyesight in one of two ways:

**Denial of blindness:** This is when a blind person can’t recognize that they are blind. This usually affects both eyes, but there are a few exceptions. One such exception is "gun-barrel vision," when a person can see only in the center of their field of vision.

**Denial of vision:** This is when a person says and believes they're blind but shows signs they can still see. This type is much rarer than denial of blindness [7].



**Figure 6:** Denial of vision

What causes anosognosia? Anosognosia can happen for many different reasons, all of which fall into one of two

categories:

**Brain damage:** Your brain is prone to injury like any part of your body. Damage to your brain causes injuries called lesions. Lesions that cause anosognosia can happen for any of the following reasons:  
 Aneurysms.

Brain tumors (including cancerous and non-cancerous growths).  
 Head injuries such as concussions or traumatic brain injuries (TBIs).  
 Cerebral hypoxia (brain damage from lack of oxygen).  
 Infections (such as those that cause encephalitis).  
 Seizures and epilepsy.  
 Sleep apnea.  
 Strokes.  
 Toxins, such as carbon monoxide poisoning [8].



Figure 7: Both hemisphere of brain

**Degenerative diseases:** Many different brain diseases disrupt your brain's network of connections. That kind of disruption can affect your ability to update your self-image, leading to anosognosia. Conditions that cause or involve this kind of disruption include:

- Alzheimer's disease.
- Bipolar disorder.
- Dementia.
- Huntington's disease.
- Schizophrenia.

**Anosognosia isn't contagious:** How is anosognosia diagnosed? Anosognosia is effectively invisible unless a provider already knows you have a health problem and they see the signs that you

don't recognize that problem. In many cases, that means a provider first has to diagnose a condition that's having a significant impact on your life.

**What tests will be done to diagnose it?** Diagnostic and imaging tests that are possible with anosognosia include, but aren't limited to, the following:

- Computerized tomography (CT) scan.
- Electroencephalogram (EEG).
- Magnetic resonance imaging (MRI).

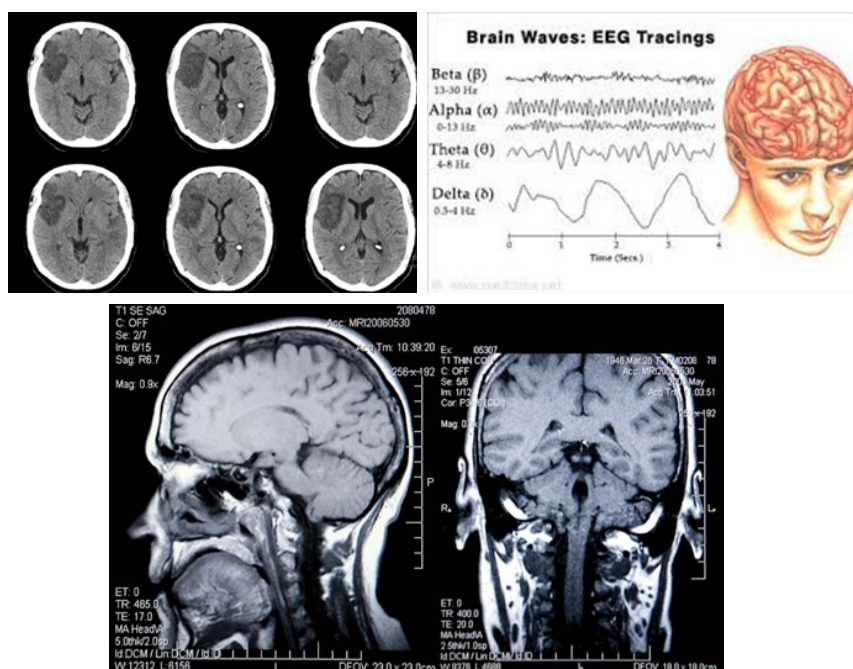


Figure 8: Anosognosia diagnosis

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**Management and Treatment:** Anosognosia is difficult to treat and isn't curable. When it happens because of an injury to your brain, treating the underlying injury may help this condition over time. However, some people will have lingering or even permanent effects. Anosognosia also isn't treatable when it happens because of degenerative diseases. But some forms of therapy and treatment programs may help a person with this condition.

**What medications or treatments are used?** There are no treatments or medications that directly help anosognosia. Therapy and treatment programs can help a person with anosognosia develop habits that compensate for this, but these do not treat the condition itself.

**What are the possible complications with this condition?** The possible complications with anosognosia depend entirely on the disorder that the person has but can't recognize. That's because people with anosognosia can't recognize they have a problem, which means they're less likely to accept and undergo treatment. Because the complications can vary so widely, a healthcare provider is the best person to explain the possible complications. They can tailor the explanation and information to the specific situation affecting you.

**How can I take care of myself or manage symptoms?** Anosognosia isn't a condition that you should try to self-diagnose or treat on your own. That's because this condition often happens along with much more serious conditions that need care from a trained, experienced healthcare provider [9].

### Prevention

How can I reduce my risk of developing anosognosia or prevent it from happening? Anosognosia is a condition that happens unpredictably, so it's not preventable. It also has to happen alongside other conditions or problems like stroke or schizophrenia. While some of these conditions are preventable, having them isn't a guarantee that you'll develop anosognosia.

It's still a good idea to take care of and protect your brain. The best things you can do include:

- 1) Eat a balanced diet and maintain a weight that's healthy for you. Many conditions related to your circulatory and heart health, especially stroke, can cause brain damage. Preventing stroke and similar conditions is a key way to reduce the risk of developing conditions that can lead to anosognosia.
- 2) Don't ignore infections. Eye and ear infections that spread to your brain can easily become serious or deadly. They can also cause brain damage that leads to conditions involving anosognosia.
- 3) Wear safety equipment. Brain damage from head injuries can cause problems that also involve anosognosia. That means safety equipment, especially helmets, are essential both at work and during your off-hours.
- 4) Manage your health conditions. It's essential to manage conditions that can lead to or involve anosognosia, especially mental health conditions like schizophrenia. Managing those conditions can help you avoid serious complications or situations where an unmanaged condition becomes much worse [10].

### Prognosis

What can I expect if I have anosognosia? The problem with this condition is that it keeps you from recognizing other illnesses. Because you can't recognize them, it's much harder to protect yourself from their effects. An example of this is how people with one-sided paralysis are much more at risk for fall injuries because they still think they can stand up. How long does it last? When it happens because of a lesion from an injury to your brain, it's more likely that anosognosia will get better on its own. While it may go away in some cases, it's also possible that it's permanent. Anosognosia is permanent when it happens with mental health conditions or degenerative brain disorders [11].

**What is the outlook for this condition?** Anosognosia isn't fatal or dangerous on its own, but it increases your risk of complications from other problems. People with this condition are also more likely to resist or avoid medical treatment for the condition they can't recognize. If you have anosognosia, following your healthcare provider's guidance and advice is important. Relying on and trusting their expertise is essential because of your inability to see your health conditions. That includes seeing your provider as recommended, taking medications as prescribed and watching for any changes in your symptoms, especially ones you can't explain otherwise. The symptom anosognosia or unawareness of disease in dementia has mainly been studied in patients with late-onset dementia (LOD,  $\geq 65$  years), whereas little is known on whether it is also present in patients with early-onset dementia (EOD,  $< 65$  years).

**When should I see my healthcare provider?** Your healthcare provider will recommend a schedule of appointments for follow-up and ongoing care. It's important that you see your healthcare provider as recommended. That way, they can help monitor your condition and recommend changes as needed [12].

**When should I go to the ER [emergency room]?** Your healthcare provider can tell you the symptoms or changes that mean you need immediate medical care. They're the best source of information regarding the specifics of your conditions and circumstances. Anosognosia is a condition that can be confusing and frightening. To others, it might seem like stubbornness or living in denial, when in reality, this condition affects a person's ability to understand what's happening to their own body. For people who have this condition, it's important to build a trusting relationship with your healthcare provider and to rely on their expertise. If you or a loved one has anosognosia, it's also important to be as patient and understanding as possible. A strong support system and the help of loved ones can make a big difference with this condition, hopefully minimizing its effects on any other connected condition(s) and the health and well-being of everyone involved.

### Conclusion

Anosognosia is a neurological condition in which the patient is unaware of their neurological deficit or psychiatric condition. It is associated with mental illness, dementia, and structural brain lesion, as is seen in right hemisphere stroke patients. It can affect the patient's conscious awareness of deficits involving judgment, emotions, memory, executive function, language skills, and mo-

tor ability. This activity examines when this condition should be considered and the differential diagnosis for this condition. This activity highlights the role of the interprofessional team in caring for patients with this condition. Anosognosia is a frequent symptom of EOD, occurring in 94.5% of all-cause EOD, and it is associated with higher risk of developing neuropsychiatric symptoms during disease progression. Recognizing anosognosia may be helpful for clinicians and families to reduce diagnostic delay and improve disease management.

## References

1. Patel, J. B., Patel, K. M., Shah, D. H., Patel, J. S., Garg, C. S., Brahmabhatt, K. J., & Sen, D. J. (2011). Functional Magnetic Resonance Imaging: A New Diversion in Medical Diagnosis. *Research Journal of Pharmacy and Technology*, 4(8), 1167-1176.
2. Orfei, M. D., Caltagirone, C., & Spalletta, G. (2009). The evaluation of anosognosia in stroke patients. *Cerebrovascular Diseases*, 27(3), 280-289.
3. Shah, D. H., Patel, K. M., Patel, J. B., Patel, J. S., Garg, C. S., & Sen, D. J. (2011). INTERFACE BETWEEN NEUROIMAGING AND BRAIN MAPPING IN COGNITIVE PSYCHOLOGY. *International Journal of Drug Development and Research*, 3(2), 0-0.
4. Baier, B., & Karnath, H. O. (2005). Incidence and diagnosis of anosognosia for hemiparesis revisited. *Journal of Neurology, Neurosurgery & Psychiatry*, 76(3), 358-361.
5. Panchal, I. I., Sen, D. J., Parmar, R. S., & Shah, S. K. (2012). Schizophrenia: Treatment and Future aspects: a Systemic Review. *Asian Journal of Research in Chemistry*, 5(12), 1503-1512.
6. Vogel, A., Stokholm, J., Gade, A., Andersen, B. B., Hejl, A. M., & Waldemar, G. (2004). Awareness of deficits in mild cognitive impairment and Alzheimer's disease: do MCI patients have impaired insight?. *Dementia and geriatric cognitive disorders*, 17(3), 181-187.
7. Patel, S. J., Patel, K. K., Patel, M. S., Rupak, M. A., Patel, Y. B., Sanyal, A. P., ... & Sen, D. J. (2016). Neuro stimulants cognitive enhancers as nootropics in multi task Hectic Schedule. *World Journal of Pharmaceutical Research*, 3(5), 570-590.
8. Smith, A. J., Campbell, R. W., Harrison, P. K., & Harrison, D. W. (2016). Functional cerebral space theory: Towards an integration of theory and mechanisms of left hemineglect, anosognosia, and anosodiaphoria. *NeuroRehabilitation*, 38(2), 147-154.
9. Egbert, A. R. (2017). A Framework for Ethical Decision Making in the Rehabilitation of Patients with Anosognosia. *The Journal of Clinical Ethics*, 28(1), 57-66.
10. Sen, D. J. (2017). Galantamine as benzofuro-benzazepine alkaloid used in cognition and dementia. *World Journal of Pharmaceutical Sciences*, 1-5.
11. Abela E, Missimer JH, Pastore-Wapp M, Krammer W, Wiest R, Weder BJ. Early prediction of long-term tactile object recognition performance after sensorimotor stroke. *Cortex*. 2019; 115: 264-279.
12. Sen DJ and Dan T; Mood swing: a complete phenomena of neuro disorder from obsessiveness to possessiveness: *World Journal of Pharmaceutical and Life Sciences*. 2021; 7(7): 218-233.

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